

IN THE CLAIMS

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims

Claim 1. (Withdrawn): A method of producing an intermediate image transfer belt for an image forming apparatus that includes an image carrier for forming a latent image, a developing device for developing said latent image with a developer to thereby form a corresponding toner image and said intermediate image transfer belt to which said toner image is transferred from said image carrier, and executes primary image transfer from said image carrier to said intermediate image transfer belt and then executes secondary image transfer from said intermediate image transfer belt to a recording medium, said method comprising the steps of:

feeding a first raw liquid material, into a hollow, cylindrical mold, which is included in a centrifugal molding machine, while causing said mold to rotate;

curing the first raw material to thereby form a first endless belt layer on an inside of the mold;

feeding a second raw liquid material into the mold while causing said mold to rotate;
and

curing said second raw liquid to thereby form a second belt layer;

wherein said first belt layer has elasticity while said second belt layer has greater hardness than said first belt layer.

Claim 2. (Withdrawn): The method as claimed in claim 1, further comprising the step of forming a third belt layer different in material from said first layer and said second layer on said second layer.

Claim 3. (Withdrawn): The method as claimed in claim 2, wherein the first raw liquid material provides said first belt layer with elasticity after curing while the second raw liquid material provides said second belt layer with hardness greater than hardness of said first belt layer after curing.

Claim 4. (Withdrawn): The method as claimed in claim 3, wherein said first belt layer and said second belt layer have a same major composition except for hardness.

Claim 5. (Withdrawn): The method as claimed in claim 4, wherein said first belt layer has hardness ranging from 30° to 70°, as measured by JIS A scale.

Claim 6. (Withdrawn): The method as claimed in claim 5, wherein said first belt layer has thickness ranging from 50 micrometers to 2,000 micrometers.

Claim 7. (Withdrawn): The method as claimed in claim 6, wherein the first raw liquid material comprises thermosetting polyurethane rubber.

Claim 8. (Withdrawn): The method as claimed in claim 7, wherein said second belt layer has hardness of 75° or above, as measured by JIS A scale.

Claim 9. (Withdrawn): The method as claimed in claim 8, wherein said second belt layer has a Young's module ranging from 200 MPa to 3,000 MPa.

Claim 10. (Withdrawn): The method as claimed in claim 9, wherein said second belt layer has thickness ranging from 30 micrometers to 1,000 micrometers.

Claim 11. (Withdrawn): The method as claimed in claim 10, wherein the second raw liquid material comprises thermosetting polyurethane resin.

Claim 12. (Withdrawn): The method as claimed in claim 11, wherein the inside of the mold has smoothness of 1 micrometer or less in terms of a ten-point mean roughness (JIS).

Claim 13. (Withdrawn): The method as claimed in claim 12, wherein the inside of the mold has a glass value of 80 or above.

Claim 14. (Withdrawn): The method as claimed in claim 1, wherein the first raw liquid material provides said first belt layer with elasticity after curing while the second raw liquid material provides said second belt layer with hardness greater than hardness of said first belt layer after curing.

Claim 15. (Withdrawn): The method as claimed in claim 1, wherein said first belt layer and said second belt layer have a same major composition except for hardness.

Claim 16. (Withdrawn): The method as claimed in claim 1, wherein said first belt layer has hardness ranging from 30° to 70°, as measured by JIS A scale.

Claim 17. (Withdrawn): The method as claimed in claim 1, wherein said first belt layer has thickness ranging from 50 micrometers to 2,000 micrometers.

Claim 18. (Withdrawn): The method as claimed in claim 1, wherein the first raw liquid material comprises thermosetting polyurethane rubber.

Claim 19. (Withdrawn): The method as claimed in claim 1, wherein said second belt layer has hardness of 75° or above, as measured by JIS A scale.

Claim 20. (Withdrawn): The method as claimed in claim 1, wherein said second belt layer has a Young's module ranging from 200 MPa to 3,000 MPa.

Claim 21. (Withdrawn): The method as claimed in claim 1, wherein said second belt layer has thickness ranging from 30 micrometers to 1,000 micrometers.

Claim 22. (Withdrawn): The method as claimed in claim 1, wherein the second raw liquid material comprises thermosetting polyurethane resin.

Claim 23. (Withdrawn): The method as claimed in claim 1, wherein the inside of the mold has smoothness of 1 micrometer or less in terms of a ten-point mean roughness (JIS).

Claim 24. (Withdrawn): The method as claimed in claim 1, wherein the inside of said mold has a gloss value of 80 or above.

Claim 25. (Withdrawn): A method of producing an intermediate image transfer belt for an image forming apparatus that includes an image carrier for forming a latent image, a developing device for developing said-latent image with a developer to thereby form a corresponding toner image and said intermediate image transfer belt to which said toner image is transferred from said image carrier, and executes primary image transfer from said image carrier to said intermediate image transfer belt and then executes secondary image transfer from said intermediate image transfer belt to a recording medium, said method comprising the steps of:

feeding a first raw liquid material into a hollow, cylindrical mold, which is included in a centrifugal molding machine, while causing said mold to rotate to thereby form an endless first film on an inside of said mold;

feeding a second raw liquid material into the inside of the mold while causing said mold to rotate to thereby form a second film on said first film; and

curing the raw liquid materials respectively forming said first film and said second film;

wherein said first film forms, when cured, an elastic, first belt layer while said second forms, when cured, a second belt layer having greater hardness than said first belt layer.

Claim 26. (Withdrawn): The method as claimed in claim 25, further comprising the step of forming a third belt layer different in material from said first layer and said second layer on said second layer.

Claim 27. (Withdrawn): The method as claimed in claim 26, wherein the first raw liquid material provides said first belt layer with elasticity after curing while the second raw liquid material provides said second belt layer with hardness greater than hardness of said first belt layer after curing.

Claim 28. (Withdrawn): The method as claimed in claim 27, wherein said first belt layer and said second belt layer have a same major composition except for hardness.

Claim 29. (Withdrawn): The method as claimed in claim 27, wherein said first belt layer has hardness ranging from 30° to 70°, as measured by JIS A scale.

Claim 30. (Withdrawn): The method as claimed in claim 29, wherein said first belt layer has thickness ranging from 50 micrometers to 2,000 micrometers.

Claim 31. (Withdrawn): The method as claimed in claim 30, wherein the first raw liquid material comprises thermosetting polyurethane rubber.

Claim 32. (Withdrawn): The method as claimed in claim 31, wherein said second belt layer has hardness of 75° or above, as measured by JIS A scale.

Claim 33. (Withdrawn): The method as claimed in claim 32, wherein said second belt layer has a Young's module ranging from 200 MPa to 3,000 MPa.

Claim 34. (Withdrawn): The method as claimed in claim 33, wherein said second belt layer has thickness ranging from 30 micrometers to 1,000 micrometers.

Claim 35. (Withdrawn): The method as claimed in claim 34, wherein the second raw liquid material comprises thermosetting polyurethane resin.

Claim 36. (Withdrawn): The method as claimed in claim 35, wherein the inside of the mold has smoothness of 1 micrometer or less in terms of a ten-point mean roughness (JIS).

Claim 37. (Withdrawn): The method as claimed in claim 36, wherein the inside of the mold has a gloss value of 80 or above.

Claim 38. (Withdrawn): The method as claimed in claim 25, wherein the first raw liquid material provides said first belt layer with elasticity after curing while the second raw liquid material provides said second belt layer with hardness greater than hardness of said first belt layer after curing.

Claim 39. (Withdrawn): The method as claimed in claim 25, wherein said first belt layer and said second belt layer have a same major composition except for hardness.

Claim 40. (Withdrawn): The method as claimed in claim 25, wherein said first belt layer has hardness ranging from 30° to 70°, as measured by JIS A scale.

Claim 41. (Withdrawn): The method as claimed in claim 25, wherein said first belt layer has thickness ranging from 50 micrometers to 2,000 micrometers.

Claim 42. (Withdrawn): The method as claimed in claim 25, wherein the first raw liquid material comprises thermosetting polyurethane rubber.

Claim 43. (Withdrawn): The method as claimed in claim 25, wherein said second belt layer has hardness of 75° or above, as measured by JIS A scale.

Claim 44. (Withdrawn): The method as claimed in claim 25, wherein said second belt layer has a Young's module ranging from 200 MPa to 3,000 MPa.

Claim 45. (Withdrawn): The method as claimed in claim 25, wherein said second belt layer has thickness ranging from 30 micrometers to 1,000 micrometers.

Claim 46. (Withdrawn): The method as claimed in claim 25, wherein the second raw liquid material comprises thermosetting polyurethane resin.

Claim 47. (Withdrawn): The method as claimed in claim 25, wherein an inner surface of said mold has smoothness of 1 micrometer or less in terms of a ten-point mean roughness (JIS).

Claim 48. (Withdrawn): The method as claimed in claim 25, wherein the inner surface of said mold has a gloss value of 80 or above.

Claims 49-96 (Canceled).

Claim 97 (Withdrawn): An image forming apparatus comprising:
an image carrier for forming a latent image;
a developing device for developing the latent image with a developer to thereby form
a corresponding toner image; and
an intermediate image transfer body to which the toner image is transferred from said
image carrier, said intermediate image transfer body constituting an intermediate image
transfer belt for executing primary image transfer from said image carrier to said intermediate
image transfer belt and then executing secondary image transfer from said intermediate image
transfer belt to a recording medium;
wherein a first raw liquid material is fed into a hollow, cylindrical mold, which is
included in a centrifugal molding machine, with said mold being rotated;
the first raw material is cured to thereby form a first endless belt layer on an inside of
the mold;
a second raw liquid material is fed into the mold with said mold being rotated, and
then cured to thereby form a second belt layer; and
said first belt layer has elasticity while said second belt layer has greater hardness than
said first belt layer.

Claim 98 (Withdrawn): An image forming apparatus comprising: an image carrier
for forming a latent image;
a developing device for developing the latent image with a developer to thereby form
a corresponding toner image; and

an intermediate image transfer body to which the toner image is transferred from said image carrier, said intermediate image transfer body constituting an intermediate image transfer belt for executing primary image transfer from said image carrier to said intermediate image transfer belt and then executing secondary image transfer from said intermediate image transfer belt to a recording medium;

wherein a first raw liquid material is fed into a hollow, cylindrical mold, which is included in a centrifugal molding machine, with said mold being rotated to thereby form an endless first film on an inside of said mold;

a second raw liquid material is fed into the mold with said mold being rotated to thereby form a second film on said first film;

the raw liquid materials respectively forming said first film and said second film are then cured; and said first film forms, when cured, an elastic, first belt layer while said second film, when cured, a second belt layer having greater hardness than said first belt layer.

Claim 99. (Currently Amended) An intermediate endless image transfer belt for an image forming apparatus that comprises an image carrier for forming a latent image, a developing device for developing said latent image with a developer to thereby form a corresponding toner image and said intermediate endless image transfer belt to which said toner image is transferred from said image carrier, and executes primary image transfer from said image carrier to said intermediate image transfer belt and then executes secondary image transfer from said intermediate endless image transfer belt to a recording medium, the method by which the endless transfer belt is prepared comprising:

feeding a first raw liquid, rubber material into a hollow, cylindrical mold, which is included in a centrifugal molding machine, with said mold being rotated; curing the first raw liquid, rubber material to thereby form a first endless outer belt layer on an inside of the mold;

feeding a second raw resin liquid material into the mold with said mold being rotated, and then curing the liquid resin material to thereby form a second inner belt layer, with the result that said first outer belt layer has elasticity while said second inner belt layer has greater hardness than said first outer belt layer; and

wherein said first outer belt layer has a surface gloss of at least 50, a hardness ranging from 30° to 70°, as measured by JIS A scale, and a thickness of 200 to 2000 μm and said second inner belt layer has a thickness ranging from 30 to 1,000 μm and has a hardness greater than that of said first outer belt layer.

Claim 100. (Currently Amended) The belt as claimed in claim 99, wherein a third belt layer different in material from said first outer belt layer and said second inner belt layer is formed on said second layer.

Claim 101. (Currently Amended) The belt as claimed in claim 100, wherein the first raw liquid, rubber material provides said first belt layer with elasticity after curing while the second raw liquid resin material provides said second inner resin belt layer with a hardness greater than the hardness of said first outer rubber belt layer after curing.

Claim 102. (Currently Amended) The belt as claimed in claim 101, wherein said first outer belt layer and said second inner belt layer have a same major composition except for hardness.

Claim 103. (Currently Amended) The belt as claimed in claim 101, wherein the first raw liquid, rubber material comprises thermosetting polyurethane rubber.

Claim 104. (Currently Amended) The belt as claimed in claim 103, wherein said second inner belt layer has hardness of 75° or above, as measured by JIS A scale.

Claim 105. (Currently Amended) The belt as claimed in claim 104, wherein said second inner belt layer has a Young's module ranging from 200 MPa to 3,000 MPa.

Claim 106. (Currently Amended) The belt as claimed in claim 99, wherein the second raw liquid, resin material comprises thermosetting polyurethane resin.

Claim 107. (Previously Presented) The belt as claimed in claim 106, wherein the inside of the mold has smoothness of 1 micrometer or less in terms of a ten-point mean roughness (JIS).

Claim 108. (Previously Presented) The belt as claimed in claim 107, wherein the inside of the mold has a gloss value of 80 or above.

Claim 109. (Currently Amended) The belt as claimed in claim 99, wherein the first raw liquid rubber material provides said first outer belt layer with elasticity after curing while the second raw resin liquid material provides said second inner belt layer with hardness greater than hardness of said first rubber belt layer after curing.

Claim 110. (Currently Amended) The belt as claimed in claim 99, wherein said first outer belt layer and said second inner belt layer have a same major composition except for hardness.

Claim 111. (Currently Amended) The belt as claimed in claim 99, wherein said first outer belt layer has thickness ranging from 50 micrometers to 2,000 micrometers.

Claim 112. (Currently Amended) The belt as claimed in claim 99, wherein the first raw liquid rubber material comprises thermosetting polyurethane rubber.

Claim 113 (Currently Amended) The belt as claimed in claim 99, wherein said second inner belt layer has hardness of 75° or above, as measured by JIS A scale.

Claim 114. (Currently Amended) The belt as claimed in claim 99, wherein said second inner belt layer has a Young's module ranging from 200 MPa to 3,000 MPa.

Claim 115. (Currently Amended) The belt as claimed in claim 99, wherein the second raw liquid resin material comprises thermosetting polyurethane resin.

Claim 116. (Previously Presented) The belt as claimed in claim 99, wherein the inside of the mold has smoothness of 1 micrometer or less in terms of a ten-point mean roughness (JIS).

Claim 117. (Previously Presented) The belt as claimed in claim 99, wherein the inside of the mold has a gloss value of 80 or above.

Claim 118. (Currently Amended) An intermediate endless image transfer belt for an image forming apparatus that comprises an image carrier for forming a latent image, a developing device for developing said latent image with a developer to thereby form a corresponding toner image and said intermediate endless image transfer belt to which said toner image is transferred from said image carrier, and executes primary image transfer from said image carrier to said intermediate endless image transfer belt and then executes secondary image transfer from said intermediate endless image transfer belt to a recording medium, the method by which the endless transfer belt is prepared comprising:

feeding a first raw liquid rubber material into a hollow, cylindrical mold, which is within in a centrifugal molding machine, with said mold being rotated to thereby form an endless first film on an inner surface of said mold;

feeding a second raw liquid resin material into the mold with said mold being rotated to thereby form a second inner belt layer on said first film;

curing the raw liquid materials respectively forming said first rubber film and said second resin film; and

said first film forms, when cured, an elastic, first outer belt layer while said second resin film forms, when cured, a second inner belt layer having greater hardness than said first outer belt layer; wherein said first outer belt layer has a surface gloss of at least 50, a hardness ranging from 30° to 70°, as measured by JIS A scale, and a thickness of 200 to 2000 μm and said second inner belt layer has a thickness ranging from 30 to 1,000 μm and has a hardness greater than that of said first outer belt layer.

Claim 119. (Currently Amended) The belt as claimed in claim 118, wherein a third belt layer different in material from said first outer belt layer and said second inner belt layer is formed on said second inner belt layer.

Claim 120. (Currently Amended) The belt as claimed in claim 119, wherein the first raw liquid rubber material provides said first outer belt layer with elasticity after curing while the second raw liquid resin material provides said second inner belt layer with hardness greater than hardness of said first outer belt layer after curing.

Claim 121. (Previously Presented) The belt as claimed in claim 120, wherein said first belt layer and said second belt layer have a same major composition except for hardness.

Claim 122. (Currently Amended) The belt as claimed in claim 118, wherein the first raw liquid rubber material comprises thermosetting polyurethane rubber.

Claim 123. (Currently Amended) The belt as claimed in claim 122, wherein said second inner belt layer has hardness of 75° or above, as measured by JIS A scale.

Claim 124 (Currently Amended) The belt as claimed in claim 123, wherein said second inner belt layer has a Young's module ranging from 200 MPa to 3,000 MPa.

Claim 125. (Currently Amended) The belt as claimed in claim 118, wherein the second raw liquid resin material comprises thermosetting polyurethane resin.

Claim 126. (Previously Presented) The belt as claimed in claim 125, wherein the inside of the mold has smoothness of 1 micrometer or less in terms of a ten-point mean roughness (JIS).

Claim 127. (Previously Presented) The belt as claimed in claim 126, wherein the inside of the mold has a gloss value of 80 or above.

Claim 128. (Currently Amended) The belt as claimed in claim 118, wherein the first raw liquid rubber material provides said first outer belt layer with elasticity after curing while the second raw liquid resin material provides said second inner belt layer with hardness greater than hardness of said first outer belt layer after curing.

Claim 129. (Currently Amended) The belt as claimed in claim 118, wherein said first outer belt layer and said second inner belt layer have a same major composition except for hardness.

Claim 130. (Currently Amended) The belt as claimed in claim 118, wherein the first raw liquid rubber material comprises thermosetting polyurethane rubber.

Claim 131 (Currently Amended) The belt as claimed in claim 118, wherein said second inner belt layer has hardness of 75° or above, as measured by JIS A scale.

Claim 132. (Currently Amended) The belt as claimed in claim 118, wherein said second inner belt layer has a Young's module ranging from 200 MPa to 3,000 MPa.

Claim 133. (Currently Amended) The belt as claimed in claim 118, wherein the second raw liquid resin material comprises thermosetting polyurethane resin.

Claim 134. (Previously Presented) The belt as claimed in claim 118, wherein the inside of the mold has smoothness of 1 micrometer or less in terms of a ten-point mean roughness (JIS).

Claim 135. (Previously Presented) The belt as claimed in claim 118, wherein the inside of the mold has a gloss value of 80 or above.